

ALL IN A DAY

Name _____

Directions:

Make a graph to illustrate how many hours you spend on a typical school day involved in different types of activities. You should think about time sleeping, eating, being in school, doing homework, watching television, being with friends, playing sports, doing hobbies, etc.

You may want to make a table to organize your information, and you will have to select the best type of graph to use: for example, a bar graph, line graph, or circle graph.

In addition, please show all your calculations and write a brief explanation of why you chose the graph you did and your method used in making the graph.

ALL IN A DAY

MATHEMATICS STANDARDS ASSESSED

- Number operations and concepts
- Geometry and measurement
- Statistics and probability
- Problem solving and mathematical reasoning
- Mathematical skills and tools
- Mathematical communication

DIRECTIONS TO THE STUDENT

Make a graph to illustrate how many hours you spend on a typical school day involved in different types of activities. You should think about time sleeping, eating, being in school, doing homework, watching television, being with friends, playing sports, doing hobbies, etc.

You may want to make a table to organize your information, and you will have to select the best type of graph to use: for example, a bar graph, line graph, or circle graph. In addition, please show all your calculations and write a brief explanation of why you chose the graph you did and your method used in making the graph.

MATERIALS NEEDED

graph paper
ruler
compass and protractor (for a circle graph)
calculator

MATHEMATICAL CONCEPTS:

This task requests students to collect, analyze, and communicate information through a graph, table, or chart. They must first design a simple data table, and calculate the number of hours spent in a typical day in each of the major activities.

This activity will require that they estimate and calculate elapsed time. In addition, they should ensure that the number of hours in their "typical" day adds to 24 hours.

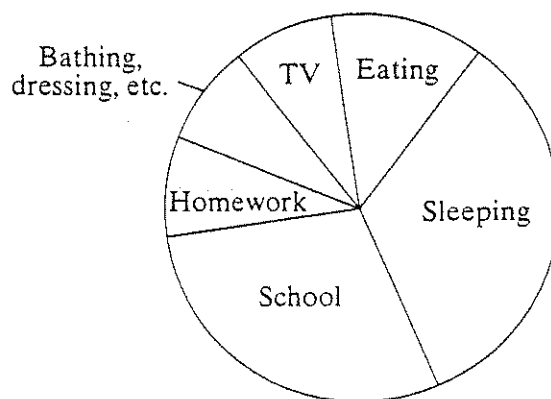
Next, students must select an appropriate graph or chart with which to communicate their results. A pictograph, a pie chart, and a bar graph are all suitable. A line graph would not be appropriate, since the events being graphed (sleeping, doing homework, eating, etc.) are discrete events; they are not continuous. For a circle graph, students will have to calculate the degrees of the circle represented by the different number of hours devoted to each activity.

Lastly, students must explain their method in writing. This narrative should reflect their estimation techniques, the reasons for their choice of graph type, and awareness that the sum of all the activities is 24 hours.

SOLUTION

Answers will vary, depending on students' daily routine. A possible solution, with the proportionate number of degrees in a circle graph, is presented below:

Activity	Number of hours	Degrees of a Circle
Eating	3 hours	45
Sleeping	8 hours	120
School	7 hours	105
Homework	2 hours	30
Bathing, dressing, etc.	2 hours	30
TV	2 hours	30
Total	24 hours	360



SCORING GUIDE

	Level One	Level Two	Level Three	Level Four
Organization of information	Information about time spent very disorganized.	Some data organization evident, but not carried through.	Data well organized.	In addition, the data is clearly presented.
Graph	Graph chosen is inappropriate to the topic or very poorly executed.	Graph chosen is adequate, but execution is poor.	Appropriate form of graph, and adequate execution.	In addition, the graph is very accurately and neatly presented.
Calculations	Major errors in calculations.	A number of small errors in calculations	Very few errors in calculations.	No calculation errors.
Explanation	Explanation very muddled.	Explanation difficult to follow.	Explanation clear enough to follow.	The explanation is very clear and displays comprehensive understanding of the relative merits of different types of graphs.